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Goals For Professional Progress

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by

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WIDER RECOGNITION of forestry as a profession is currently a popular subject among foresters. Some foresters recommend publicity as a promising means of achieving this recognition. Licensing is proposed by others. Higher educational requirements are suggested. Shunning undignified duties would help . . . uniforms might improve the public image . . . and so on.

Many of these methods may indeed be helpful. But when all is said and done, landowners, mill owners, and public agencies seek the services of foresters because of our *ability to help them*. Therefore, will not our professional stature be determined quite largely by our success in using forestry practices to solve these clients' problems — helping them achieve their individual objectives?

If so, perhaps the most promising route to recognition is technological progress. This paper suggests four areas in which such progress is particularly needed. The author believes that achievements in these areas would enable us simultaneously to serve our clients more effectively and to achieve professional stature which we would (then) deserve.

Goal 1: Progress in Communicating More Effectively With Our Clients

Too often we foresters expect landowners and other clients to intellectually "come to us" — to talk forestry and indeed this is too much to expect. We foresters must accept the responsibility for bridging this gap more effectively ourselves.

For example, we frequently need a much better understanding of what our clients' are really after in owning and managing forest land — for only when we have a clear understanding of their objectives will we be able to select the particular forest management practices that will be most helpful to them.

Similarly, we should be able to discuss a client's problems in terms of *his* interests and knowledge, and then, after selecting relevant management practices, discuss them with him in terms he will understand.

To do this, the forester's know-how must extend beyond trees. It must include a better understanding of people; their objectives, and the problems they encounter in achieving them; and the social, legal, and economic framework within which these problems must be solved.

We must be both willing and able to share the responsibility for finding effective solutions to our *client's* problems.

Educators can contribute to eventual progress in this area by including social as well as physical sciences in forestry curricula; by orienting management and other terminal forestry courses toward people's objectives, rather than stand structure, regulated yield, pathological rotations, and similar intermediate, biological objectives; and by helping students understand that although forestry is based upon plants and plant relationships, the function of both foresters and forestry is to serve people — not plants.

Researchers can also contribute. Carefully designed studies might help clarify our understanding of the objectives and actions of forest owners. They might also indicate what incentives would be effective in altering landowners' actions to coincide with those prefered by local forest industries, or society.

Goal 2: Progress in Selecting the Most Productive Investments

If the forester is truly interested primarily in his client's welfare, he will be concerned with the prudent use of his funds. Each client will have limited funds to achieve his objectives. Even large compa-

nies and federal and state agencies have definite limits to the financial resources available for various purposes, including forestry. The forester is responsible for using these forestry funds wisely.

In a sense, the forester is an investment counsellor for his client. His specialty is investments in forests and in forest-management and forest-product-utilization practices. His usefulness depends largely upon his ability to direct his clients' capital into those investments that will yield the greatest return relative to the cost involved — with return measured in whatever benefits his client is interested in. Thus, returns could be additional stumpage value to one owner, tons of cellulose to another, and additional acre-feet of clean water to another.

Two or three examples may help to illustrate the importance of "progress in selecting the most productive investments."

A recent study[1] in Pennsylvania revealed a wide range in the merits of the forestry-practice investment opportunities of one landowner. Most of the practices evaluated showed promising returns. However, the analysis indicated ways of making considerably more effective use of the limited forestry funds that were available. For example, little advantage was being taken of thinning opportunities in certain hardwood stands, because of inadequate funds — yet forestry funds were being spent on other forestry practices that promised to yield less than one-sixth as much per dollar invested. If a forester could divert funds from the lower to the higher-yielding opportunities, he would increase his client's returns six-fold!

Another recent study suggested guides for foresters to use in making the most productive use of funds available for white-pine-weevil control on public lands in New York State.[2] This study estimated that the dollar value of control benefits ranged from $3 to $61 per acre, depending on stand conditions. As might be expected, there were not nearly enough pest-control funds to protect all vulnerable white pine stands; therefore this is another illustration of the importance and potential contribution of foresters' selecting the *most* productive investments.

Unpublished analyses of white pine management opportunities on the Harvard Forest indicate that contrary to common opinion, the very best *managerial* investment opportunities appear to occur on the *poorer* sites. Specifically the most promising appears to be a very modest investment in seedbed preparation on the lighter soils.

A study[3] in the Lake States indicates a wide range of blister-rust-control investment opportunities. In Wisconsin, for example, control costs were lowest-in the South — but the benefits were greater farther North. In fact, the benefits were so much greater that the returns per control-dollar on the most promising stands in Northern Wisconsin were more than 10 times greater than those on the most promising stands in Central Wisconsin. And the comparison with Southern Wisconsin was even more striking. Effective use of limited rust-control funds demands a control program that recognizes such differences. (Appropriate adjustments are being made as a result of this study.)

Goal 3: Progress in Quantifying the Effects of Specific Forestry Practices

These illustrations show the importance of adopting the most productive practices first. But to do this we must make specific estimates of both the costs and the benefits of suitable management alternatives. How well are we able to do this? Quite frankly, at present, our technological know-how usually is inadequate.

For example, to compare alternative planting investments, we must be able to estimate planting costs, survival rates for various species, probable future cultural practices, and the volume and value of the eventual harvest, for all potential sites and planting conditions. A moment of reflection indicates that even with the relatively simple case of planting, our present knowledge falls short of providing the needed information — at least on a very reliable basis.

Another example: In evaluating the response of stands to thinning, cleaning, or improvement cuts, we know that the residual trees will generally grow in diameter more rapidly than they did before — but we don't know *how much* more rapidly.

We know that trees with clear boles are more valuable than trees with knotty stems; but we don't know *how much* more valuable. We also know that clear-boled trees cost more to "produce" — but we don't know how much more.

We are in a somewhat better position in evaluating harvesting practices and manufacturing techniques. But with labor costs changing so fast and newer equipment becoming available continuously, the operation which is efficient today may be outmoded tomorrow. Thus knowledge in this area needs frequent revision.

We know that forest insect and disease losses are great. For example, we know of large losses from *Fomes annosus* in some red pine stands, and from dwarf mistletoe in ponderosa pine stands; but we

[1] Webster, Henry N. Timber management opportunities in Pennsylvania, Northeastern Forest Exp. Sta., Sta. Paper 137. 37 pp. 1960.

[2] Marty, R. J. and G. R. Allison. "Appraising white-pine weevil control opportunities", *Journal of Forestry* 58: 203–206. 1960.

[3] King, D. B., C. H. Stoltenberg, and R. J. Marty. The economics of white pine blister rust control. U.S. Forest Service, Wash., D.C. 85 pp. 1960.

are unable to predict the amount of loss that an owner could expect from such diseases in other stands. Thus we are unable to evaluate the merits of investments to control these diseases.

We know that dense stands withdraw large volumes of water from the soil by transpiration. But as yet we cannot specify the *quantitative* effect of changing stand density or species composition on the volume, quality, and timing of water yields.

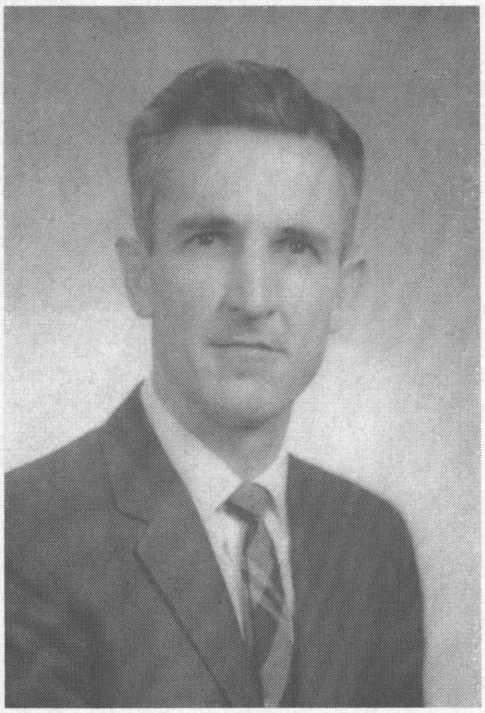
In Iowa, we know that white pine will grow faster than hardwoods on many sites — but we don't know how much faster. And we don't yet have reliable estimates of the cost of converting hardwood stands to pine. Thus we are unable to compare stand-conversion with thinning, disease-control, and other forestry investment opportunities in Iowa.

Actually, we do know quite a bit about the response we can anticipate from various forestry practices. The problem is that we usually know only the *direction of the response, and not its magnitude.* But knowledge of magnitude is essential for comparing opportunities. If foresters are to perform their function effectively, researchers, educators, and practitioners must combine efforts to quantify what we now know only in general terms.

Goal 4: Progress in Anticipating Future Needs for Knowledge

One more important goal should be mentioned. Knowledge cannot be obtained and assimilated by the profession overnight. For this reason, we must anticipate our technological needs before they actually exist. We can not afford to wait until a critical water shortage exists before we start working on possible forestry solutions to the problem. The very nature of forestry demands exceptional foresight.

The professional stature of foresters is growing. This growth will be accelerated if we forestry educators, practicitioners, and researchers can become more effective in communicating with clients, learn more about the quantitative effects of specific forestry practices, and as soon as this knowledge becomes available, use it in selecting our clients' most productive forestry investments.



About the Author

Carl H. Stoltenberg is Professor and Head of the Forestry Department at Iowa State University. He came to Ames in August, 1960, after serving as Chief of the Division of Forest Economics Research at the Northeastern Forest Experiment Station, Upper Darby, Pa.

Dr. Stoltenberg's primary interest in research has been in the area of managerial economics. His research and writings while at the Northeastern Station reflect that interest. His experience also includes teaching and research in forestry in the Southeast (Duke University) and in the Lake States. He is a "native son" of California, and a forestry alumnus of the University of California. His graduate degrees are in forestry and in economics and were received from the Universities of California and Minnesota.